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THE PLANT DISEASE REPORTER

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THE PLANT DISEASE SURVEY

Vol. IX July 15, 1925 Number 3

A NEW BACTERIAL DISEASE OF ALFALFA

The bacterial wilt and rootrot of alfalfa described in Phytopathology 15: 243-244 was one of the diseases given special attention in a field study of alfalfa diseases made by F. R. Jones and J. L. Weimer in May and June. It was found in several states as follows:

Table 3. Distribution and severity of bacterial wilt and rootrot of alfalfa.

State	County	Severity
Alabama	Perry	One small field thoroughly infested.
Mississippi	Washington	A few plants in 3 fields.
Colorado	Otero	Destructive mostly in fields 5 years old and older.
	Weld	Frequently destructive in fields 3 years old and older.
Nebraska	Scottsbluff	
	Lancaster	Found to the extent of 5% in 2 fields.
	Douglas	From a trace to 10% found in 3 fields.
Kansas	Allen	About 5 - 10% infection in one 3 year old field. Slight amount in few other fields.
	Doniphan	About 2% infection in one 3 year old field. In another field 50% of the plants were dead and 50% of the remainder were diseased.
	Douglas	Was found in 5 fields in amounts varying from a trace to 60%.
	Riley	Found causing considerable loss in several fields.
Iowa	Story	The disease was present in several fields from a trace to 5%.
	Pocahontas	2% of the plants affected in one field.

State	County	Severity
Illinois	Champaign	One field quite badly affected. In places the plants were all gone while in other places from 1 to 100% of the plants were diseased.
Indiana	Tippecanoe	Bacterial wilt found in several fields to the extent of 2 - 5%.
	Jefferson	A trace in one field only.
	Noble	Found in one field, only an occasional plant.

Up to the present time the examination of alfalfa fields for this disease has been limited largely to the Mississippi Valley States. Undoubtedly the disease occurs over a wider area than this and so collaborators will want to be on the lookout for it in all states where alfalfa is grown. It seems to be capable of causing serious damage and is already a serious factor in some sections.

WHEAT STEM RUST (PUCCINIA GRAMINIS PERS.) REPORTS FROM VIRGINIA, WEST VIRGINIA, AND ARKANSAS

Virginia: Severe locally in sections of Wythe County where Berberis canadensis is plentiful. Injury to wheat is strongly correlated with presence of barberries. Local eradication of barberry gave excellent results on two farms - wheat good and only a little rust, while that on other farms nearby is severely injured. (Fromme, July 1)

West Virginia: Practically no stem rust observed this year. Wheat is unusually free from all fungous diseases. (Giddings, July 1)

Arkansas: Quite rare as compared to Puccinia triticina. (Rosen, July 1)

LEAF RUST OF WHEAT, PUCCINIA TRITICINA ERIKS.

Delaware: Condition of crop from standpoint of disease the best observed in five years. Leaf rust was very difficult to find which is exceptional for this section. Drouth has been the most disturbing factor as indicated by undersized kernels. (Adams, July 1)

Virginia: Unusually late in appearing and injury will be less than that of average year. (Fromme, July 1)

West Virginia: Practically no leaf rust observed or reported. (Giddings, July 1)

Arkansas: Common but not serious this year. (Rosen, July 1)

Illinois: Leaf rust varied from slight in fields, or parts of fields, on high ground to 100% abundant in the heavy succulent growth. It was particularly heavy around Evansville, Ind., and again through East Washington and St. Clair Counties, Illinois. (Frank Frolik, June 15)

LOOSE SMUT OF WHEAT, USTILAGO TRITICI (PERS.) ROSTR.

Virginia: A survey of 47 fields in ten counties gave the range of infection from less than 1% up to 14%; an average of 3.4%. Only two fields had less than 1%. (Fromme, July 1)

West Virginia: About the same as usual. As much as 10% found in some fields. Average probably not over 3%. (Giddings, July 1)

Arkansas: Highest percentages of infection found this year, varied from 7 to 12%. (Rosen, July 1)

GLUME BLOTCH OF WHEAT

Glume blotch caused by Septoria nodorum Berk. was less prevalent than usual in Arkansas according to H. R. Rosen, July 1. He thinks that this was possibly due to extremely dry weather over a large part of the growing period.

REPORTS OF STEM RUST OF OATS

In the Office of Cereal Investigations Rust Reporter dated July 2, 1925, the following statement concerning Puccinia graminis Pers. on oats appears:

> "Stem rust of oats is practically absent this year north of Kansas. Thiel found a trace on one plant in Nebraska. A light infection was found near barberries in Harrison County, Missouri, and in the wild barberry area at Trempealeau, Wisconsin. A trace was found near Clark Grove, Freeborn County, Minnesota. None has been found in South Dakota, North Dakota, or Iowa."

From Virginia F. D. Fromme reports a slight infection on oats in the same section where stem rust of wheat is prevalent.

CROWN RUST OF OATS

In the Cereal Courier, Office of Cereal Investigations, for June 30, 1925, S. M. Dietz reports on the inspection of Rhamnus for oat crown rust in-

fection in Iowa and in parts of Missouri and Minnesota. He says in part:

> "Thirty-two locations of Rhamnus cathartica, comprising over 9,000 bushes, were inspected in 13 Iowa counties located in the eastern half of the state and two counties of southern Minnesota during the period between April 23 and June 1, 1925. Bushes in 22 of these locations were infected. The time of inspection in some locations was undoubtedly too early, indicated by the large percentage of bushes with only pycnial infection. Bushes in the northern and southern parts of Iowa were infected at about the same time. The first infection of Rhamnus cathartica was found in central Iowa (Story County) on April 23; the maximum degree of infection was about 20%.
>
> "Bushes in just three out of a total of 27 locations of Rhamnus lanceolata were not infected. Over 5,000 bushes were inspected throughout the southern half of Iowa and north-central Missouri. The first infection was found on April 27 on R. lanceolata in central Iowa (Warren County).
>
> "The pycnial and aecial infection on R. lanceolata in southwestern Iowa was nearly 100%; indeed, it was almost impossible to find a leaf without several aecia. Many of these bushes were so heavily infected that they had a yellowish appearance from a distance. This indicated the possibility of a severe epidemic for southwestern Iowa and northern Missouri. However, this area was revisited on May 26 and most of the aecial material had dried up. Although an inspection of over 300 oat fields and many wild grasses was made, no urediniospores were found on oats or other grasses prior to June 6, when M. A. Smith, State leader of barberry eradication in Iowa, located one uredinial sorus on oats in Warren County.
>
> "The failure of the aeciospores to infect oats and grasses probably was due to extremely dry weather. A general heavy rain fell over the upper Mississippi Valley on June 1."

LEAF SMUT OF TIMOTHY

Timothy leaf smut, caused by Ustilago striaeformis (West.) Niessl is more plentiful than last year in Massachusetts, according to W. H. Davis. In some places it was killing lawn grass in patches. It was first noted April 19 at Amherst but seems to be causing most damage during July.

REPORTS OF FIREBLIGHT (BACILLUS AMYLOVORUS (BURR.) TREV.) ON APPLE

Connecticut: One report of serious injury but on the whole less than average amount. (Clinton, July 1)

West Virginia: About as usual. No serious outbreaks. (Giddings)

Arkansas: Severe on susceptible varieties. Appeared later than last year and continued later. In general not so severe as last year, but very important. Ingram, a late-flowering variety, came into bloom in time to be severely blighted. This variety seldom blights severely but probably 90% of blossoms were blighted this year. Almost no twig blight of Ingram was noted. Transparent, Jonathan, and Maiden Blush showed considerable twig blight. (V. H. Young, July 1)

Illinois: Extremely bad throughout the state; worst blossom blight in ten years at least. Twig blight followed. The unusual feature was the absence of blossom blight in pears preceding blossom blight in apples. Also, the appearance of blight in such a severe form in an exceptionally dry spring. Blossom blight first appeared about April 20 in Union County. (Anderson, July 1)

Wisconsin: Blight is reported in epidemic form from Crawford and Brown Counties. Scattering trees are badly affected with twig blight at Madison. Some blossom blight occurred at Gays Mills. Investigations are being continued by A. N. Brooks of Wisconsin. Plant Pathology Department. (Vaughan, July 1)

Minnesota: Quite generally present throughout the state. It is particularly severe in the Twin City region, around Duluth, and around Coleraine. In the latter region it has been more severe than in many years. (Sect. Pl. Path., July 1)

Washington: It is particularly severe in the irrigated valleys and has necessitated active measures for control. It is severe on the Jonathan but has also gone into such resistant varieties as the Winesap and Delicious showing that the disease is really present in epidemic form such as we have not had for several years past. The cool spring has probably brought the trees into a susceptible condition and afforded favorable conditions for the parasite.

Due to active control measures, loss on apple will be small but with the pear, infection is so extensive and severe that there is certainty of large loss in trees that have to be sacrificed to check the spread of the disease. (Div. Pl. Path., July 6)

MORE REPORTS ON APPLE SCAB

According to these and other reports which have been received this year it would seem that in general, apple scab (Venturia inaequalis (Cke.) Aderh.) is somewhat less prevalent than usual on account of rather dry weather during the period when primary infection usually occurs.

Connecticut: Less than usual and even than last year. Spring seems to have been very unfavorable for its development. (Stoddard & Clinton, July 1)

West Virginia: Quite general, but not so destructive as in 1924. (Giddings, July 1)

Arkansas: Very little in principal apple growing sections. Apparently too dry for scab. (V. H. Young, July 1)

Illinois: The extremely dry spring resulted in almost complete control of such a disease as apple scab.

May 5 was the date when it was first observed at Urbana. Practically no scab in southern end of state on account of dry spring. Lightest infection ever known. (Anderson, July 1)

Wisconsin: Early infection much less than usual. This is associated with the extended drought of May. (Vaughan, July 1)

Minnesota: In the Twin City region and southern part of the state primary infections apparently took place about June 1, which is approximately one month late for Minnesota. At the present time there are only traces of scab in some of the orchards. There is practically none in the northern part of the state. (Sect. Pl. Path., July 1)

APPLE BLOTCH (PHYLLOSTICTA SOLITARIA ELL. & EV.)

Illinois: The extremely dry spring resulted in almost complete control of apple blotch. I made a trip two days ago through the worst blotch region in southern Illinois and during the entire trip saw no blotch except on some apples in a grocery store. Of course, I visited only sprayed orchards but in some experimental work where we had Duchess, which ordinarily blotch very badly, we did not find a single blotch spot on the fruit in the check plot. (Anderson, July 2)

Arkansas: Very little in principal apple section in Washington and Benton Counties. Common at lower altitudes in central and southern parts where little spraying of apples is done. (V. H. Young, July 1)

BLACKROT REPORT FROM ARKANSAS

"Frog-eye leafspot (Physalospora malorum (Pk.) Shear) was very abundant at Fort Smith on unsprayed trees. Not common this year in apple growing section of northwest Arkansas. Dry spring apparently unfavorable." (V. H. Young)

CEDAR RUST OF APPLES (GYMNOSPORANGIUM JUNIPERI-VIRGINIANAE SCHW.)

Massachusetts: Comparatively little this year. (W. H. Davis)

New York: Greene County Cedar rust lesions are appearing on some apples and leaves. (June 29)

West Virginia: Much less severe than in 1924. (Giddings, July 1)

Arkansas: Less than usual. (V. H. Young, July 1)

Illinois: Very light infection in southern Illinois. Orchards usually severely attacked are entirely free of the disease, due to extremely dry weather from early April to the middle of June. Many reports of serious damage in northern part of the state but mostly from farm orchards. (Anderson, July 1)

Wisconsin: Rust has been observed less than usual this year at Gays Mills. (Vaughan, July 1)

Minnesota: Considerable rust on apples has been found in certain localities, particularly Albert Lea, Taylors Falls, and Filmore County. (Sect. Pl. Path., July 1)

LOW TEMPERATURES AFFECT DELAWARE PEACH CROP

"The low temperatures during the first week of March and the continued frosts caused terminal die-back and killing of lateral buds. Some growers associated it with spray injury but the disturbance was equally prevalent in young plantings not sprayed.

"The commercial orchard sections experienced severe loss because of low temperatures during April. April 7 in Sussex County the temperature was 25° while in Kent County it was 29°. Trees were in blossom. Elberta and Belle's showed 90% blooms killed in Sussex County while in Kent County 50% were killed." (Adams, July 1)

BROWNROT OF PEACH (SCLEROTINIA FRUCTICOLA (WINT.)REHM)

Connecticut: Very little blossom or leaf blight. (Clinton, July 1)

New York: This disease has so far progressed in several peach orchards as to cause a very serious loss, the twigs having been killed back from a few inches to a foot; this condition is quite general throughout the orchards. (L. E. Fitch, June 15)

Delaware: Apothecia were mature at Newark April 4, 1925. Blossom and twig infection prevalent in New Castle County following wet cool weather, April 30. Only a trace in Kent and Sussex Counties. Fruit infection following curculio stings found June 5. (Adams, July 1)

Virginia: A severe case of blossom blight occurred at Leesburg in the Bilyeu variety. Approximately 60% infection. Infection also occurs in other orchards in the locality. (Fromme, July 1)

South Carolina: Much less severe than usual owing to the unprecedented dry weather. (Ludwig, July 1)

Illinois: A few cases on early peaches in Union County. Very rare. (Anderson, July 1)

PEACH LEAFCURL (EXOASCUS DEFORMANS (BERK.) FCKL.) REPORTS

Massachusetts: Common on unsprayed trees; very little in orchards where dormant spray was applied. (Osmun & Doran)

Connecticut: No complaints. (Clinton)

Delaware: First observed April 16. Unusually heavy infection of leaves and terminal growth. Increase over heavy infection of last year. (Adams)

Virginia: Abundant in unsprayed or poorly sprayed orchards. (Fromme)

South Carolina: Much less severe than usual. (Ludwig)

Illinois: Almost entirely absent from the state this year. (Anderson)

BACTERIAL SPOT OF PEACHES AS REPORTED FROM ILLINOIS

"Bacterial spot (Bacterium pruni EFS.) was not as severe as last year. It appeared in Johnson County on June 1 but a few infected leaves were found on May 20. General infection in this region on July 1 following heavy rains in the middle of June. Very little shot hole in Union and Pulaski Counties. Severe at Centralia in one orchard on June 2." (Anderson)

FROST INJURY TO GRAPES IN ILLINOIS

"The frost of May 23 did extremely serious damage to grapes throughout the state. These grapes are recovering in part but many of them will undoubtedly show the effects of the freeze for some time to come. Less than 50% of a crop may be expected this year. This is partly due, however, to the low temperatures during the past winter, since only about a 60% to 70% set was obtained." (Anderson)

OZONIUM ROOTROT OF GRAPES IN ARIZONA

"Half of vines in a five-acre vineyard in Maricopa County either dead or dying from rootrot. Others probably affected. Entire planting is to be removed." (Streets)

STRAWBERRIES DAMAGED BY ROOTROT IN SEVERAL STATES

Maine: Crownrot (undet.) caused a browning of the crown in the lower end, the browning later extending up to the top, followed by drying and appearance of cavities. Leaves apparently healthy on some partly brown crowns, then chlorotic, rolled, purple on lower surface, wilting, brown, and dead. Conspicuously affected plants grouped. In several places now. Has been found in previous years. (Folsom)

Massachusetts: Instances of from 10 to 20% loss of plants due to rootrot. In many cases Rhizoctonia appeared on the roots, but for the most part this appeared to be secondary to winter and drouth injury. (Osmun & Doran)

Connecticut: An undetermined rootrot, probably of fungous origin has been seen for a few years past in one of the large grower's fields. It seems this year to have been more conspicuous. (Stoddard)

New York: Rootrot has infected one farmer's fields causing a loss of probably 90% of his crop. (Fitch)

Illinois: About the same number of reports of this disease as usual. (Anderson)

Wisconsin: Reports of poor stands with plants dying after crop set in Racine, Milwaukee, Waukesha, and Dane Counties. (Vaughan)

CANTALOUPE DISEASES IN MARYLAND

On July 9 and 10, R. A. Jehle, W. W. Gilbert, and R. J. Haskell inspected twenty-one cantaloupe fields comprising approximately 100 acres, in various parts of the counties of Caroline, Dorchester, and Wicomico on the Eastern Shore of Maryland. The most important disease evident at that time was mosaic which was found in 17 of the 21 fields. In general, not more than a trace was present but in one field about 50%, in another 10%, and in two others 1% of the plants were affected. In three of the worst fields the relation of infected pokeweed (Phytolacca) to mosaic of cantaloupes was very clearly demonstrated; most of the diseased cantaloupe plants being on the sides of the fields near which infected pokeweeds were found growing. Aphis injury and mosaic were also found associated.

Bacterial wilt was found in ten, or about half of the fields examined. Only a few scattered plants in each field (2 to 8) were observed, however, and the resulting damage was not over 0.25% in these fields.

No downy mildew or anthracnose was observed on cantaloupes although the latter disease was found on cucumbers in several instances.

A few leafspots in early stages were seen. One of these was apparently Macrosporium in very early stages. It was not advanced far enough at that time, however, to be diagnosed easily and only traces of it were showing.

ASCOCHYTA BLIGHT OF COTTON IN ALABAMA

Walter L. Blain of the Alabama Agricultural Experiment Station writes July 3 reporting this cotton disease for the first time from Alabama. He says:

> "We have found an infection of Ascochyta blight, (Ascochyta gossypii Syd.) on cotton at Luverne, Alabama.
>
> "The first infection in Alabama was found last year at Ashford, in the extreme southeastern part of the state. This year's infection is about 100 miles north of last year's infection. This is rather remarkable to me in that the weather around Luverne has been dry this year. Elliott reported the infection in Arkansas as bad in rainy weather, with an abrupt stopping of the infection and recovery of some plants with the advent of dry weather. The man who sent the sample in to the office said it was local, occurring in only one spot in the field."

RHIZOCTONIA ON COTTON LOCALLY SEVERE IN ARIZONA

> "Two-thirds reduction of stand in 20 acre field of cotton in Cochise County. The injury was aggravated by irrigating the field when the young plants showed the first injury." (Streets)

TOBACCO CHEWING AND SPITTING APPARENTLY SPREADS MOSAIC ALSO

> "Tests to control tobacco mosaic thru the thorough eradication of mosaic carrying weeds from the tobacco bed has had no apparent effect. At setting time we have been unable, so far in our beds, to find any mosaic in the tobacco. Initial infection ranges from slight in parts of fields to 8 and 10% in other parts and the plants are so distributed as to indicate that certain men pulling plants cause high percentage of initial mosaic infection, and others very slight or none. Most tobacco men in Kentucky chew the natural leaf from

the previous crop. By wetting the hands in chewing tobacco decoction and pulling plants, we have obtained 83% infection in about 170 plants, while the checks pulled with clean hands from the same area in the bed, remained free. Other evidence indicates that when clean plants are set in the close vicinity of mosaic infected weeds very early in the season and are fed upon extensively by flea beetles, they will still remain free if not handled by man. It appears now that infected chewing tobacco will largely explain initial mosaic infection, although the mosaic weed carriers can and undoubtedly do, under some circumstances, play a part in dissemination of mosaic." (W. D. Valleau, July 10)

BACTERIAL BLIGHT OF PEAS, BACTERIUM PISI (SMITH) JONES.

Wisconsin: Widely reported from central and northwestern Wisconsin pea sections following severe storms of June 9-14. Early planted Alaskas most affected. (Vaughan)

Minnesota: Bacterial blight has been quite general throughout southern Minnesota, the reports coming particularly from Ramsey, Dodge, Martin, Dakota, and LeSeur Counties. Infections in most fields range from a trace to 50% of the plants with considerably less in some cases. (Sect. Pl. Path.)

PEA ROOTROT, APHANOMYCES EUTEICHES DRECHS.

Wisconsin: Aphanomyces type of rootrot is much less prevalent than last year. This is associated with the extended drought of May. It is apparently as widely distributed as last year. (Vaughan)

DOWNY MILDEW OF SPINACH, PERONOSPORA EFFUSA (GREV.) CES.

Connecticut: Some damage from the blight which has been unusually conspicuous the past three seasons. Damage most in Westport region where most spinach is grown and attention to rotation not given. (Clinton)